Surface area measurements will be based on the width of the base as specified in the Contract Documents and the actual length measured along the center line of the base surface.

502.04.02 Portland Cement for Soil-Cement Base Course will be measured and paid for at the Contract unit price per ton.

SECTION 503 — CHIP SEAL SURFACE TREATMENT

503.01 DESCRIPTION. This work shall consist of applying one or two seal coats or a prime coat followed by one or two seal coats as specified in the Contract Documents or as directed by the Engineer. The seal coat shall consist of applying an emulsified asphalt followed by an application of aggregate. The prime coat, when required, shall consist of preparing and treating an existing surface with emulsified asphalt.

503.02 MATERIALS.

MATERIAL	SECTION	APPLICATION	SIZE OR GRADE	SPREAD RATE lb/yd^2	SPRAY TEMP F	SPRAY RATE SINGLE COAT OR FIRST COAT gal/yd^2	SPRAY RATE FOR SECOND COAT (Double) gal/yd^2
Aggregate	901	Single or First Coat	No. 7	25-50	—	—	—
		Second (Double Coat)	No. 8	20-35	—	—	—
Emulsified Asphalts	904.03	Seal Coat	CRS-1	—	70-140	0.3-0.5	0.2-0.4
			CRS-2	—	140-160	0.3-0.5	0.2-0.4
			RS-1	—	70-140	0.3-0.5	0.2-0.4
			RS-2	—	140-160	0.3-0.5	0.2-0.4

503.03 CONSTRUCTION. At least 30 days prior to the start of placement of the chip seal surface treatment, the Contractor shall submit a proposed plan, including equipment and material sources to the Engineer for approval.

The Contractor shall protect the treated pavement against damage from all causes. Any part of the pavement that is damaged shall be repaired or replaced by the Contractor in a manner acceptable to the Engineer at no additional cost to the Administration.

503.03.01 Equipment. All equipment shall be subject to approval by the Engineer.

(a) Asphalt Distributing Equipment. Asphalt distributing equipment will be inspected and calibrated by the Administration prior to use and shall bear a current Administration inspection and calibration tag. A calibration chart showing the total capacity, in gallons, of the distributor tank, and the fractional capacity for each 1/4 in. of tank depth shall be carried in the unit. The unit shall be capable of uniformly applying the specified material on variable widths of surface at the rates specified in 503.02. In addition, the equipment shall include the following:

(1) A fifth wheel tachometer for maintaining uniform speed.

(2) A thermometer graduated in 2 F increments to determine the specified temperature ranges.

(3) Heaters for uniformly heating the materials to the proper temperatures.

(4) Full circulation spray bars that are laterally and vertically adjustable, plus a hand spray.

(5) A calibrated tank to determine the quantity of asphalt in each load and the amount used.

(6) A valve or petcock built into the equipment for sampling the asphalt.

(7) A motor driven pump with pressure gauges to deliver the material to the spray bars. When a variable speed pump and metering system is used, the Contractor shall provide the Engineer with charts prepared by the manufacturer for selecting the proper pump speed for each application.

(b) Aggregate Spreader. The aggregate spreader shall be either self-propelled or attached to a truck tailgate.

(c) Rollers. Refer to 504.03.01(c).

503.03.02 Weather Restrictions. The chip seal surface treatment shall be placed only when the ambient air and surface temperature is at least 50 F and rising. Pavement shall be clean and dry. When weather conditions differ from these limits, material en route from the plant to the job site may be used at the Contractor's risk. If placement of the material is stopped by the Engineer, all material en route shall be disposed of at no additional cost to the Administration.

503.03.03 Foundation Preparation. Prior to placement of the chip seal surface treatment material, the foundation for the chip seal shall be constructed as specified in the Contract Documents and as directed by the Engineer. When paving over existing pavement, ruts and pot holes shall be repaired to provide a smooth surface for the application of the chip seal surface treatment.

503.03.04 Prime Coat. Prior to the application of the prime coat, the surface shall be cleaned of all loose and foreign materials. The prime coat shall be uniformly applied to the surface at the application rate specified in 503.02. Excess material in pools shall be removed before the next coat.

503.03.05 First Seal Coat.

(a) A minimum of 24 hours after the application of the prime coat, an emulsified asphalt shall be sprayed on the surface at the application rate specified in 503.02.

(b) Immediately following the asphalt application, a dry, dust free aggregate shall be spread on the surface at the application rate specified in 503.02. Excess aggregate shall be removed and all areas containing insufficient aggregate shall be corrected.

503.03.06 Rolling. Immediately following the aggregate application, the surface shall be rolled until the aggregate is uniformly embedded into the asphalt. The rolling shall be discontinued if the aggregate begins to crush.

503.03.07 Second Seal Coat. When specified, after the first seal coat has cured a minimum of 24 hours, a second seal coat shall be applied to the surface, omitting the prime coat. The application rate for emulsified asphalt and aggregate shall be as specified in 503.02. Excess aggregate shall be removed and all areas containing insufficient aggregate shall be corrected. The surface shall then be rolled as specified in 503.03.06.

503.03.08 Traffic. Completed sections shall be closed to traffic until the final seal coat has completely cured as directed by the Engineer. The Contractor shall maintain the treated surface after it has been opened to traffic until final acceptance.

503.04 MEASUREMENT AND PAYMENT. The payment will be full compensation for the foundation preparation, furnishing, hauling, preparing, removing excess aggregate, placing materials, and for all material, labor, equipment, tools, and incidentals necessary to complete the work.

Chip Seal Surface Treatment will be measured and paid for at the Contract unit price for one or more of the items listed below as specified in the Contract Documents.

503.04.01 No. 7 Aggregate for Single Coat Chip Seal Surface Treatment per ton.

503.04.02 No. 8 Aggregate for Second Coat Chip Seal Surface Treatment per ton.

503.04.03 Emulsified Asphalt for Seal Coat per gallon.

The actual number of gallons of emulsified asphalt distributed will be corrected to the corresponding volume at 60 F as determined by use of conversion tables furnished by the Administration.

SECTION 504 — HOT MIX ASPHALT PAVEMENT

504.01 DESCRIPTION. This work shall consist of constructing hot mix asphalt (HMA) pavement as specified in the Contract Documents.

504.02 MATERIALS.

Performance Graded Asphalt Binders	904.02
Tack Coat	904.03
Hot Mix Asphalt Mixes	904.04
Crack Filler	911.01
Production Plant	915

504.03 CONSTRUCTION.

Quality Control Plan. At least 30 days prior to the placement of any HMA pavement, the Contractor shall submit in writing a plant Quality Control Plan to the Team Leader of the Asphalt Team and a field Quality Control Plan to the Engineer for approval. The Quality Control Plans shall contain a statistically based procedure of random sampling and shall show how the Contractor proposes to control the equipment, materials, production and paving operations to ensure conformance with these Specifications. A master plant Quality Control Plan may be submitted for this prior approval. If a master plant quality control plan is submitted and approved, an addendum shall be submitted for each specific Contract.